



SOFT-SERVE AND FROZEN YOGHURT FREEZER

USER GUIDE

(OPERATING MANUAL)

for

MODEL: **EFE 4000**

Manual Number: V **002 - 27.02.2012**



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2.CONTACT DETAILS & HELP DESK

Smach Gıda Makine San.Tic.A.Ş **ADDRESS AND CONTACT DETAILS**

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Manisa/TURKEY
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E-Mail: info@smach.com.tr

When calling Smach have the following information ready:

1. Freezer Serial Number: Found on body panel

Write down the serial number in this box

2. This Model Number: MODEL **EFE 4000**

3. A brief description of the problem

3. CONGRATULATIONS AND THANK YOU!

Congratulations — and thank you for acquiring a Soft-Serve Ice Cream Machine manufactured especially in Turkey by Smach Gıda Makine A.Ş.

If you encounter a problem with the Smach Soft Serve Ice Cream Machine please contact your local Service Technician

Please familiarize yourself with the machine by taking some time to study this User Guide. If you get to know this little ice-cream factory, it has the potential of making good profit.

Notice and no warrantee: These pages are provided as a service and informational purpose only, and on the assumption that the recipient of the Soft-Serve Freezer and the operator of the Soft-Serve Freezer is competent to perform the required tasks, including, but not limited to operation and/or repair of power equipment, for which the information is provided, and that person is knowledgeable and mindful of proper safety precautions. Neither Smach, nor any of their respective employees make any claims about the suitability or fitness of the information contained herein which is provided strictly on an "as-is" basis, without any express or implied warranty, guarantee, assurance of quality, conformity of specifications, reliability, functionality, or suitability. In no event shall Smach and/or its employees be held liable, whether in contract or tort, to any party for any direct, indirect, punitive, or consequential damages, including, but not limited to lost profits and business interruption, arising out of any errors, typographical or otherwise, inaccuracies, omissions, or delays arising out of or pertaining to the use, reliance on, or inability to use any type of information, part, or good, even if notified in advance about the possibility of such action. Information in this manual is subject to change without notice. All rights reserved.

4. ELECTRICAL CONNECTION NOTICE

1. Please make sure that the power supply conforms to the electrical data label (Rating Plate).
2. Check the data label (Rating Plate) for the required circuit breaker amperage. Only plug into an electrical wall socket that complies with the required amperage of the machine
3. Machine should be installed according to the local authority electrical code/regulations it is used in, as well as to other work health and safety requirements. If you are not sure, please contact your local authority for details.
4.  — this symbol indicates the presence of electric shock hazards. Inside the enclosures of the machine there are electrical shock hazards, therefore, **do not** remove any panels if you are not a qualified technician of an authorized service provider.
5. **WARNING:** To avoid risk of injury from electric shock, if you are not a qualified and duly authorised service technician, do not open the enclosure panels on the sides and back of the machine
6. The power supply must be properly grounded to prevent electrical shock. Check with a qualified installer for compliance.

5. WARNINGS & PRECAUTIONS

Soft-Serve Freezers and Soft-Serve mix work in conjunction. A good mix and a bad machine will result in poor quality product. Vice-versa — a poor-quality mix and a top-of-the-range machine will also give poor results.

Keep your Freezer clean and tidy! When it needs repairing, work with an authorized Smach service agent.

The service technician or installer must be a suitably qualified and authorized person and must amongst other things ensure the following:

1. That the Freezer is properly grounded (earthed).
2. The fuse must be 220-240V, 50 Hz 16 Amp.
3. Never open the panels to reach inside the Freezer body. (Only by authorized technicians).
4. Do not clean the machine with high-pressure water.
5. Technical maintenance must be done by authorized technicians.
6. Only use food-grade lubricant when changing or replacing the O-rings on the pistons.

NOTICE: Smach Gıda Makine A.Ş will not take any responsibility if the users do not follow all the instructions as described in this User Guide.

6. PROPER USE OF THE SOFT-SERVE FREEZER

When properly used and cared for the Machine will provide a consistent quality Soft-Serve or Frozen Yoghurt. Like all equipment used to manufacture food products it will require daily cleaning and regular maintenance. A specified amount of care and attention is required including but not limited to everything prescribed in this manual.

SAFETY NOTICES

Smach is concerned about the safety of the person/s using the machine. Therefore please take note and abide by amongst others, the following WARNINGS:

-  The weight of the Machine is no less than 210 kg. Moving it must only be done by persons who are trained and qualified to move a weight of at least 210 kg in the shape and size of the machine.
-  A potential risk exists if the User Guide instructions and other safety precautions are not strictly followed.
-  Do NOT allow untrained personnel to operate the Soft-Serve Freezer.
-  Do not use the Machine before studying this User Guide. Failure to follow this instruction may result in equipment damage, poor performance, health hazards or personal injury.
-  Do not allow anyone to attempt any repairs to the Machine unless the main power supply to it has been disconnected from the power supply point.
-  Do NOT insert or remove the beater from the freezing barrel while the Machine is connected to the power supply. First isolate the power supply.
-  Do NOT remove the hopper lid unless you are filling or re-filling the hopper with the mix
-  Do **NOT** switch ON the Machine at the wall socket switch when the following has not yet been done: (a) the beater is inserted properly (b) the barrel head is fitted correctly and the four nuts screwed on correctly and tightly, and (c) the barrel is flooded with Mix
-  When removing, replacing or cleaning the removable parts do so with caution because the beater blades have sharp edges that can easily cause injury.
-  Always follow local authority food safety and other health codes.
-  Always follow in-store operating and food hygiene safety and other health codes.

7. OPERATING PROCEDURE

1. Always wash your hands with soap and potable water before assembling the machine. (Preferably use new paper towels to dry your hands)
2. Only use the removable parts after they have been washed sanitized and air-dried.
3. Fit the beater assembly only when the Machine is powered off.
4. Follow all the instructions of this manual and the operating procedures of the store owner, and at all times follow recognised in-store hygiene procedures, in particular those in respect of dairy products.
5. Repairs must be done by the persons who are authorized by Smach, if not, any product failure warrantee will become invalid and void.

8. CLEARANCE PARAMETERS

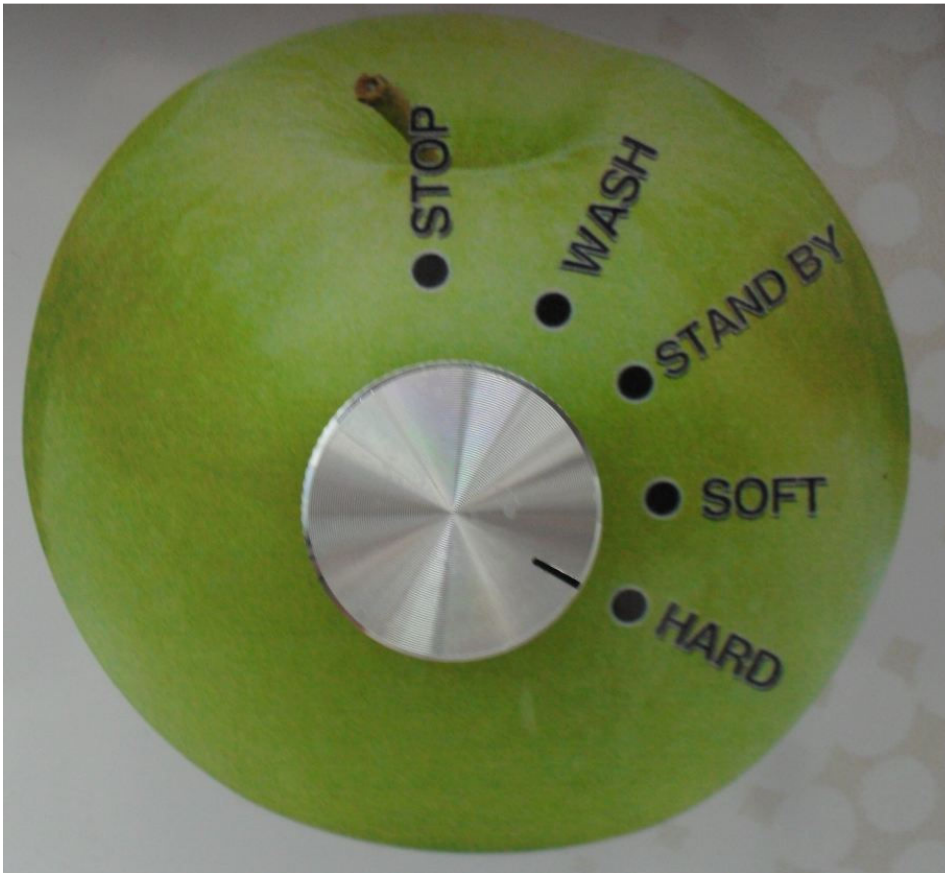
This Machine is air-cooled and must have a clearance of at least 50cm between the back side and any other object behind it. There must be a clearance of at least 50cm between the sides of the freezer and any adjacent object. If not, the freezer will not work properly.

Position the machine for easy accessibility for cleaning, servicing and maintenance. A clean environment is also essential for the proper performance of the freezer.

Attention: The freezer must not be exposed to direct sunlight. If it stands in direct sunlight the performance will decrease. As the air temperature increases the performance decreases. This is true for all refrigeration equipment.

Cool air is the best friend of the machine! It just hates HOT air !!!!

9. CONTROL DIAL



The CONTROL DIAL has the following selections:

STOP

In the STOP position the Freezer is still switched **ON** and the Hopper refrigeration is working. **NB! To switch the freezer OFF it must be done at the electrical wall socket dial.**

WASH

In the WASH position the Soft-serve in the barrel will be agitated, however no refrigeration will occur.

STAND-BY

In the STAND BY position the barrel will retain frozen product in a semi-soft state for prolonged periods of non-use. Both barrel and hopper will be chilled.

SOFT / HARD

Choose the SOFT / HARD selection depending on the type of Soft-Serve Product you have chosen and the consistency you find more preferable.

10. STEP-BY-STEP PREPARATION PROCEDURE

PREPARATION – 1

Before plugging the power cord of the freezer into the wall power socket, or pulling out the power cord plug - turn the CONTROL DIAL to the STOP position.

Attention: NEVER ASSEMBLE OR DISASSEMBLE ANYTHING UNLESS YOU HAVE:

1. Selected the Stop mode
2. switched off the power at the wall and un-plugged the power cable.

PREPARATION – 2

Make sure that all the removable parts have been washed and sanitized Sanitizer with potable water and then air dried before they are used.

PREPARATION – 3

You will need a food grade lubricant to do the assembly described below.

11. STEP-BY-STEP ASSEMBLY AND START-UP PROCEDURE

STEP- 1: ASSEMBLE THE DISPENSING HEAD PISTON: using food grade lubricant: Slip the appropriate O-rings onto the piston.

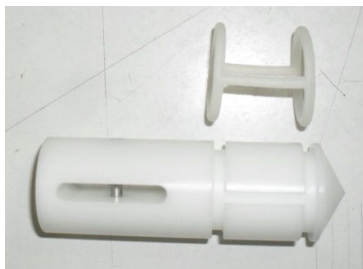
Place a small amount of lubricant onto your middle and index finger and evenly coat the piston's entire surface. The coating must be all-encompassing but must not be too thick; a very thin layer will suffice.



BEFORE

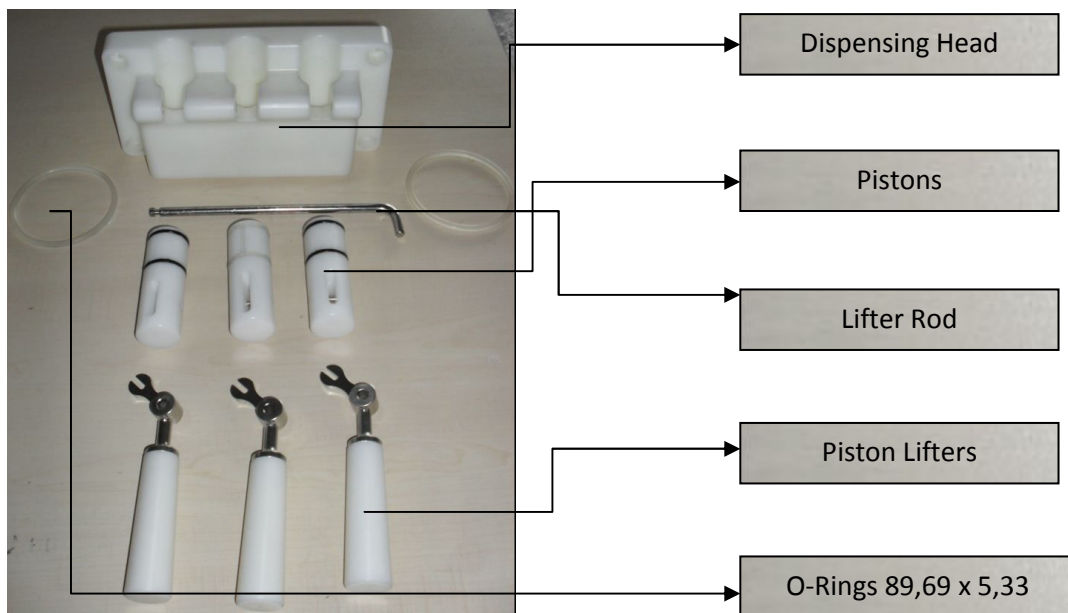


AFTER



STEP- 2: DISPENSING HEAD ASSEMBLY

1. Dispensing Head Disassembled:



2. Dispensing Head O-Ring Assembly: Again, place a small amount of lubricant onto your index- and middle finger and hold the large DISPENSING HEAD SEAL O-RING between the lubricated fingers and your thumb. Gently pull the O-ring through your lubricated fingers until it is entirely covered. The coating of lubricant should be thicker than on the piston as it will prevent the O-ring from slipping during the latter stages of the assembly. Place the O-ring gently into the designated groove of the Dispensing head and press firmly into place.



BEFORE



AFTER

3. Dispensing Head Piston Assembly: Insert the lubricated piston into the dispense head. This motion should be quite free and without too much force. If the piston does not move freely, a little more Lubricant is required.

In that case, remove the piston, add a little more lubricant as prescribed above and re-insert.



BEFORE

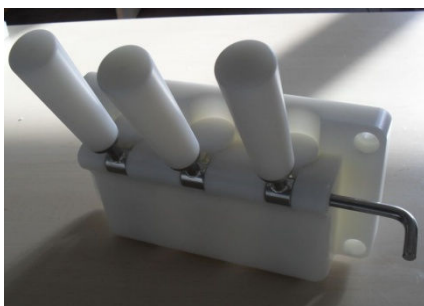


AFTER

4. Dispensing Head Piston Lifter Assembly:



5. Dispensing Head Lifter Rod Assembly:



BEFORE

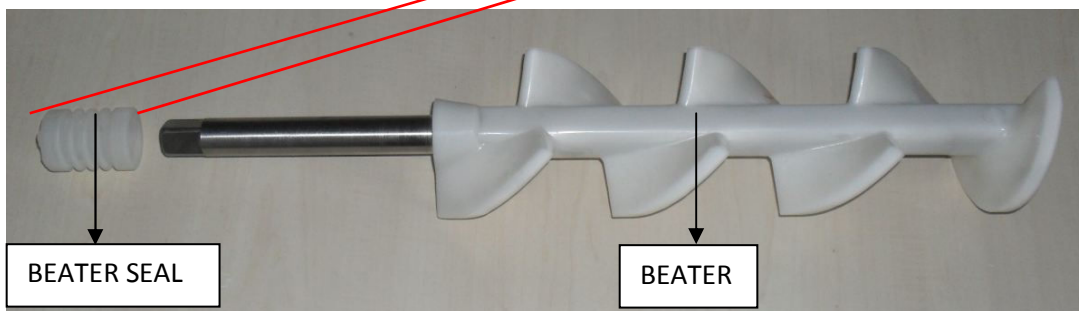


AFTER

6. Dispensing Head Assembled:



STEP- 3: ASSEMBLE THE BEATERS: Lubricate the two faces of the Beaters Drive Shaft Seal and slip over the drive shaft.



STEP-4 : ASSEMBLE THE BEATERS TO THE MACHINE:



1. Empty Barrel



2. Beater Insert

Make sure the Barrel is free of any obstruction before you insert the Beater.

The beater must slide in easily with a final firm push and some turning to align the shaft with the gearbox socket.

When it is pushed in the Silicon seal will push it out a few millimeters like a spring. Do not be concerned about this, as you place the dispensing head on, the dispense head will push it into position. You can now proceed to put the dispensing head on as described below



3. Inserted Beaters

STEP- 5: FITTING THE ASSEMBLED DISPENSING HEAD



PLACE THE DISPENSE HEAD OVER THE 4 FITTING BOLTS:

NB! Make sure the dispense handle is in the UP position so Soft-Serve liquid does not run out.



SCREW ON THE 4 DISPENSE HEAD SCREWS TIGHTLY AND LIFT THE DISPENSE HANDLE TO THE UP POSITION

NB! When tightening the Dispense Head Screws, do so in a cross order (i.e., left-hand top and right-hand bottom and then right-hand top and left-hand bottom).

DISPENSER HANDLE — CLOSED AND OPEN POSITIONS



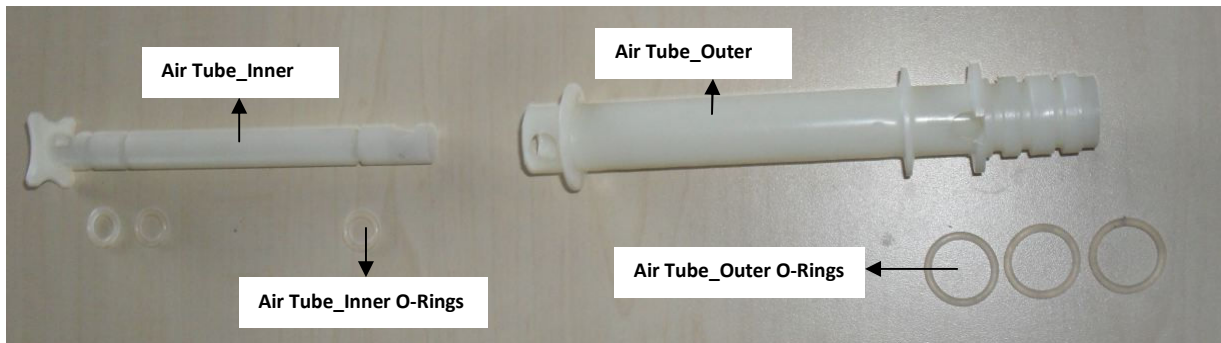
CLOSED



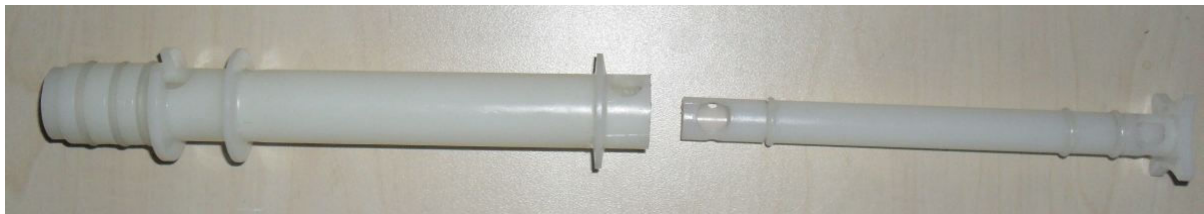
OPEN

STEP-6: AERATION TUBE ASSEMBLY

1. Aeration Tube Disassembled:



2.O-Ring Assembly: grease the O-rings



3. Inner-Outer Aeration Tube Assembly: Slip two parts to each other.



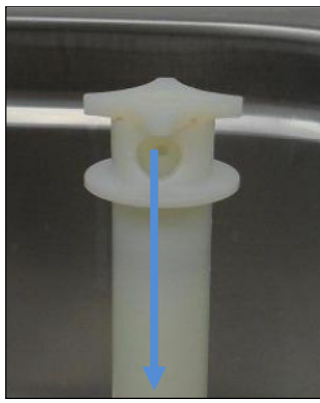
Step-by-step process to assemble the AERATION Tube:

The AERATION TUBE has two parts — OUTER and INNER
The OUTER has a large hole TOP and BOTTOM (These are constant)

The INNER tube has 3 different size holes TOP and BOTTOM
The INNER is turned inside the OUTER to select SMALL, MEDIUM or LARGE



TOP LARGE INNER



TOP MEDIUM INNER



TOP SMALL INNER



BOTTOM LARGE INNER



BOTTOM MEDIUM INNER



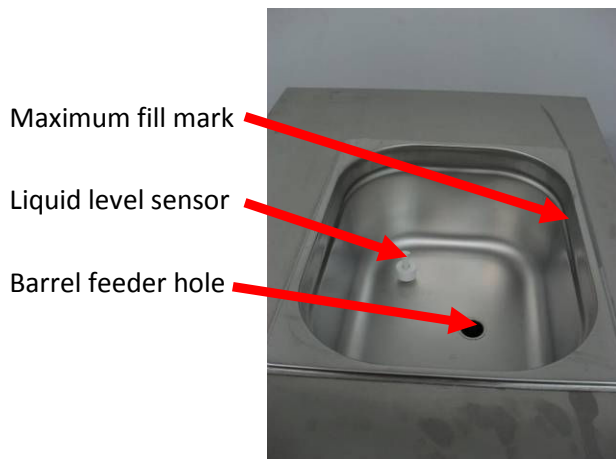
BOTTOM SMALL INNER

The selection of the correct INNER hole-size depends on the product that is run through the Soft-Serve Freezer and what amount of aeration is desired.

The setting can be changed during operations by simply turning the INNER aeration tube to the desired size hole.

The SMALL HOLE will increase air percentage in the Soft-Serve and yield higher overrun.
The MEDIUM HOLE will result in an average air percentage and yield a medium overrun.
The LARGE HOLE for will decrease the air percentage and yield a lower overrun.
The LARGE HOLE setting may also be required for high-viscosity (thick) liquid mixes

STEP- 7 (NB! At this stage the **CONTROL DIAL** is still in the **STOP** position). **FILL THE HOPPER** with mix and wait until the bubbling in the **HOPPER** has stopped. Then push the assembled aeration tube into the feeder hole in the floor of the **HOPPER**.



THE HOPPER CAN TAKE 7 Litres OF MIX — always follow product specific mixing instructions — IT HAS A LIQUID LEVEL SENSOR AND A FEEDER HOLE TO HOUSE THE AERATION TUBE:

STEP- 7: Place the **HOPPER LID** in position.

STEP- 8: Turn the **CONTROL DIAL** to the **STAND BY** position. The liquid in the hopper will cool down to about 2°C to 4°C within about 15 to 20 minutes if the liquid has already been pre-cooled to about 6°C to 7°C in a fridge. At the same time the liquid **MIX** in the **Barrel** will also cool down to about 2°C to 4°C.

STEP- 9: Turn the **CONTROL DIAL** to either **SOFT** or **HARD** mode and wait till the freezing-down has completed. The freeze-down will stop and the Freezer will become quiet when the Soft-serve is frozen down to the selected state of **SOFT** or **HARD**. (*Once the machine has reached the selected hardness the refrigeration compressor will automatically stop for pre-set intervals*).

STEP- 10: After the Freezer has frozen down and stopped draw about 300 grams of Soft-Serve into a washed and sanitized beaker — measure the temperature — and record it next to the hopper liquid temperature on the temperature record chart referred to below.

STEP- 11: When a serve is dispensed the Freezer is automatically activated by the movement sensor switch when it senses the cone in hand being held below the dispense head nozzle.

12. STEP-BY-STEP CLEANING PROCEDURE

Attention: Extra attention must be given for cleaning and sanitizing properly.

Because Bacteria population can increase very fast, cleaning and sanitizing is vital.

The Freezer must be cleaned and sanitized according to your local authority requirements.

NB! Please check with your local authority.

Follow these steps for cleaning: (All water used must be potable water)

1. Firstly, set the Freezer to the “WASH” mode and wait 3 minutes.
2. Place an empty container under the dispense head and drain the remaining Soft-Serve and liquid into a clean, sanitized bucket. Immediately place a tight sealing lid onto the bucket and store refrigerated (preferably below 5°C – see bacteria growth tables above) in a refrigerator that has no odors like those of Onions and so on.
3. Fill the hopper with cold water and allow the machine to run for 2-3 minutes before draining the water into the bucket.
4. Refill the hopper with warm water and Sanitizer as per the sanitizer manufacturer's instructions.
5. Allow the machine to run for approximately 5 minutes before draining the liquid into the bucket.
6. Repeat step 5 until the water runs clear.
7. Set the control DIAL to STOP mode and then switch off the power at the wall socket and unplug the power cable.
8. Undo and remove the screws of the Dispense Head.
9. Remove and disassemble the dispense Head, Piston, Beater and O-rings.
10. Wash and sanitize all parts as per your local requirements and allow the parts to air-dry. Do not use any chemicals other than the approved Sanitizer during the cleaning process.
11. Assemble all the parts, ensuring the O-rings and their grooves are properly lubricated.
12. Start by lubricating the harmonica-shaped Beater Shaft seal and slip it onto the beater shaft:
 - a. Place the beater into the barrel and turn it slowly until it locks into position.
 - b. Lubricate the smaller O-rings, slip them onto the piston and place the piston into the dispense head.
 - c. Lubricate the large O-ring and place into the back of the dispense head.
13. Place the Dispense head back onto the machine and tighten the screws in a cross-wise manner.

For optimal machine-performance, the condenser must be cleaned from dust and dirt regularly by an authorized technician.

Notice: During cleaning and maintenance, follow all instructions given in this User Guide, otherwise, Smach Gıda Makine A.Ş. will not take any responsibility of unwanted results.

13. BACTERIA GROWTH TABLE:

This is to demonstrate how important the correct hopper temperature is:

<i>E. coli</i> multiplication under varying temperature conditions			
Time	Number of organisms at 5°C generation time = 3 hours	Number of organisms at 20°C generation time = 1 hours	Number of organisms at 37°C generation time = 20 min
0 time	1	1	1
1 hour	1	2	8
2 hours	1	4	64
3 hours	2	8	512
4 hours	2	16	4,096
5 hours	2	32	32,768
6 hours	4	64	262,144
7 hours	4	128	2,097,152
8 hours	4	256	17,000,000
9 hours	8	512	130,000,000
10 hours	8	1,024	1,100,000,000

At least once every 8 hours measure the temperature of the liquid in the Hopper to ensure it is below 5°C. Record the temperature on a schedule with date, time and the temperature as per the example immediately below.

Example:

DATE	EST. TIME	HOPPER LIQUID TEMP	SOFT-SERVE TEMP	NAME
01.01.2011	08:00	7°C	-7°C	John Smith

14. POSSIBLE FAILURES AND SOLUTIONS

Attention: DO NOT ALLOW ANY TECHNICAL MAINTENANCE OR REPAIRS BEFORE DISCONNECTING THE FREEZER FROM THE POWER SUPPLY.

If the solutions listed below in the Trouble Shooting guide do not resolve your operational problems, call an authorized service agent for further assistance.

TROUBLESHOOTING GUIDE

	Problem	Cause	Solution
1	Machine does not run	No electricity//power	Check if plugged in and switch on at wall socket
		Control DIAL mode is wrong	Set the control DIAL onto SOFT or HARD
2	Compressor starts, then stops after a few seconds.	No air circulation	Check the clearances around the machine and ensure that it is at least 50cm.
3	Machine fails to cut-off when running on SOFT or HARD mode	Air circulation is restricted	Check the clearances around the machine and ensure that it is at least 50cm.
		Too much air in the freezer-barrel	Open Dispense head and drain-off ½ litre of product.
		No mix in the Hopper	Re-fill the Hopper
4	Machine works, but no product comes from the Dispense Head.	Dispense head is blocked with ice	Place the machine onto Wash mode and allow the product to thaw. Remove 1 litre mix and re-start the machine.
		Mixing instructions of Soft-serev was not followed	Drain the machine and re-fill with proper mix.
		The product is frozen too hard	Set the Control to Wash mode and allow the product to soften.
5	Machine runs, but Product is too soft	Mixing instructions of Soft-serev was not followed	Drain the machine and re-fill with proper mix.
		Machine remained idle without dispensing product for too long.	Remove 1 litre of frozen product and allow the machine to recover.
		Too much frozen product is dispensed at a time.	Allow the machine to recover; then continue to draw within the production-limits for this model.
6	Mix leaks from the Dispense Head	Piston O-ring is missing	Drain the machine and add O-rings
		Piston O-rings are worn	Drain the machine and replace the O-rings
		Dispense Head O-ring is missing or displaced	Drain the machine and add or adjust O-rings
		Dispense Head bolts are not tightened sufficiently or are tightened unevenly	Tighten Dispense head screws evenly and properly
8	Mix leaks from the Drip Tube	Beater-seal is missing	Drain the machine and add Beater-Seal
		Beater-seal is worn	Drain the machine and replace beater-seal.